

REMARKS

Claims 1-5 are pending in the above-identified application. Support for the change to claim 1 is found in paragraph [0018] at page 10 of the specification.

Request for Entry of Claim Amendment

It is respectfully requested that the change to claim 1 be entered of record under 37 C.F.R. 1.116, since this change raises no new significant issues in that the molecular range feature was previously recited in claim 2 and has been narrowed to a preferred range with insertion into claim 1. Also, this change to claim 1 places the claims into better form for consideration on appeal, should an appeal be necessary. Finally, no new claims have been introduced. Thus, it is requested that this change to claim 1 be entered of record and be considered by the Examiner.

Issues under 35 U.S.C. § 103(a)

Claims 1-5 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Molitor '193 (USP 4,560,193). In view of Hamada '678 (USP 4,929,678) or Kakiuchi '257 (USP 4,683,257).

Claims 1-5 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Binette '684 (USP 6,315,684) or Watanabe '850 (USP 6,966,850).

The above-noted rejections are traversed based on the following reasons.

The Present Invention And Its Advantages

(I) the golf ball has a core formed by vulcanizing and press-molding a rubber composition and at least one layer of a cover covering the core;

(II) the rubber composition contains a base rubber, a co-crosslinking agent, an organic peroxide, a filler and a processing aid;

(III) the base rubber includes a polybutadiene (a) containing a cis-1,4 bond of not less than 80% and synthesized using lanthanide-containing catalyst;

(IV) the organic peroxide comprises an organic peroxide having 10 hours half-life period temperature of 80 to 100 °C;

(V) the processing aid is fatty acid ester, fatty acid salt or the mixture thereof;

(VI) the polybutadiene (a) has a ratio (Mw/Mn) of weight average molecular weight (Mw) to number average molecular (Mn) of 2.5 to 3.5; and

(VII) the core has a center hardness in JIS-C hardness of 50 to 70, a surface hardness in JIS-C hardness of 70 to 90 and a hardness difference (B-A) between the surface hardness (B) and the center hardness (A) of 15 to 28.

In addition to the above-noted features, which are all recited in claim 1, it is noted that claim 5 recites that the vulcanization temperature is in the range of 100 – 130 °C.

The above-noted features allow the golf ball of the present invention to exhibit advantageously improved properties. For example, Table I at paragraph [0057] on page 34 of the specification describes the various ingredients and processing conditions employed to make Example No. 1 (present invention) and Comparative Example Nos. 1-4. In this regard, note that Example No. 1 employs an appropriate polybutadiene rubber synthesized using a lanthanide-containing catalyst and having a cis-1,4 bond content of not less than 80%, together with an

ADM/cm

appropriate processing aid and vulcanization temperature. Table 3 at paragraph [0069] on page 39 of the specification shows that Example No. 1 (present invention) exhibits an advantageously improved combination of processability, coefficient of restitution, durability and shot feel properties over Comparative Example Nos. 1-4 which fail to include one or more of the appropriate polybutadiene rubber, component, core hardness properties and/or vulcanization processing conditions required by the present invention.

Distinctions Between Present Invention and Cited References

Molitor ('193) discloses a golf ball having a core with a central portion having a Shore C hardness greater than 75 in combination with a core surface hardness of Shore A of less than 80 (i.e., Shore C hardness of less than 37) as noted at column 2, lines 25-43.

Hamada ('678) discloses a rubber composition for a solid golf ball which includes a polybutadiene rubber having a cis-1,4 bond content of at least 80% and other ingredients. Kakiuchi ('257) discloses a solid golf ball which is formed by using different types of polybutadiene rubbers, including one synthesized using a lanthanide rare earth element base catalyst.

All of Molitor '193, Hamada '678 and Kakiuchi '257 fail to disclose or suggest the core center and surface hardness properties of feature (VII) of the present invention. In addition, all of these references fail to disclose or suggest the polybutadiene rubber molecular weight properties of feature (VI) as indicated above. In this regard, note that Hamada '678 discloses at

column 2, lines 17-25 that the Mw/Mn ratio must be at least 4.0 which is above the upper end point of 3.5 for the present invention. Consequently, significant and numerous patentable distinctions exist between the present invention and all of these cited references. It is additionally noted that the fact that these references may disclose one or more of the various ingredients employed in making the core of the golf ball of the present invention falls far short of providing an adequate basis for asserting *prima facie* obviousness, since the types and amounts of components, as well as the processing conditions, can be varied to achieve different golf ball core properties as clearly shown by the comparative test evidence provided in the present specification and summarized above. The fact that these references fail to disclose or suggest either of features (VI) or (VII) establishes that the basis for asserting obviousness fails to satisfy minimum *prima facie* obviousness standards because less than all of the claimed elements have been identified in the cited references. *In re Vaeck*, 20 USPQ 2d 1438 Fed. Cir. 1991 and MPEP 2143, Rev. 3 Aug 2005, page 2100-135.

Binette '684 discloses a golf ball having a core which may be formed by using the combination of different polybutadiene components, as well a variety of other components, some of which overlap with those employed in the present invention.

Binette '684 fails to disclose or suggest the core center and surface hardness of feature (VII). Just as with the other cited references discussed above, the failure of Binette '684 to disclose or suggest the core hardness properties establishes that this reference fails to provide any suggestion for obtaining the golf ball of the present invention. Since the types and amounts of components may be varied, as well as the processing conditions, to vary the core hardness

properties, Binette '684 must, at a minimum, provide some suggestion to one skilled in the art to obtain the core hardness properties of the golf ball of the present invention in order for this reference to satisfy minimum *prima facie* obviousness requirements.

Watanabe '850 discloses a two-piece solid golf ball having a core which is formed using polybutadiene base rubber which has a cis-1,4 content of at least 40%. The core of Watanabe '850 has a JIS C hardness measured at any portion thereof of 58-87, more preferably 62-83. In addition, the JIS C hardness of the surface of the core is higher than that of the center of the core by an amount of 20 or less, more preferably 10 or less as noted at column 6, lines 6-35.

Watanabe '850 fails to disclose or suggest the use of a polybutadiene synthesized using a lanthanide-containing catalyst, or the use of a polybutadiene with a Mw/Mn ratio of 2.5 – 3.5 as in features (III) and (VI) of the present invention. In addition, the core hardness ranges of Watanabe '850 are inconsistent with those of the present invention. For example, Watanabe '850 allows for any portion of the core to have a JIS C hardness of at least 58, preferably 62, whereas in contrast, the surface of the core of the golf ball of the present invention must have a JIS C hardness of at least 70. Further, Watanabe '850 prefers a difference between center and surface hardness 10 or less which is significantly below the lower end point of the range of the present invention of 15 – 28. Watanabe '850 also employs a high vulcanization temperature of at least 145 °C which contrast with the vulcanization temperature of at most 130 °C in some embodiments of the present invention. Therefore, numerous significant patentable distinctions exist between the present invention and Watanabe '850. In addition, Watanabe '850 fails to recognize the advantageously improved combination of processability, durability and shot feel

properties as evidenced by the comparative test results discussed above and described in the present specification. Consequently, significant patentable distinctions exist between the present invention and Watanabe '850. Further, even if Watanabe '850 provides a proper basis for alleging *prima facie* obviousness, such obviousness has been rebutted by the evidence of unexpected, advantageous properties. Thus, all of the above-noted rejections should be withdrawn. It is submitted for the reasons stated above that all of the presently pending claims define patentable subject matter such that this application should be placed into condition for allowance.

If any issues arise regarding the above matters, please contact Applicant's representative, Andrew D. Meikle, in the Washington Metropolitan Area at the phone number listed below.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant respectfully petitions for a one (1) month extension of time for filing a reply in connection with the present application, and the required fee of \$120.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

By 

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